

Figure 1: *pQE(Sp1)*, Nucleic Acid Sequence (designated SEQ ID NO. 1)

09/14/2029/ 19/1

ATGAGAGGATCGCATCACCATCACCATCACGGATCCATGGCTAGCGGTAGAGGCGGGCTGGGTGGCCAG
GGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGC
CTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCC
GCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGT
AGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGC
CGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGG
TGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCT
GGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCG
GGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAG
AGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGG
CGGTGCCGGCCAAGGYGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGG
CCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGG
CGGCCTGGGTTCTCAGGGGACTAGTGGATCCGTCGACCTGCAGCCAAGCTTAATTAG

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MRGSHHHHHHGSMA SGRGGLGGQGAGAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAA
AAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAGGAGQGGYGGLGSQGTSGRGGLG
GQGAGAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAGGAGQGGYGGLGSQ
GTSGRGGLGGQGAGAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAGGAGQ
GGYGGLGSQGTSGIRPAAKLN.

MRGSHHHHHHGSMA SGRGGLGGQGAGAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAA
AAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAGGAGQGGYGGLGSQGTSGRGGLG
GQGAGAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAGGAGQGGYGGLGSQ
GTSGRGGLGGQGAGAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAGGAGQ
GGYGGLGSQGTSGIRPAAKLN.

Figure 3. *pQE [(SP1)/(SP2)]*, Nucleic Acid Sequence (designated SEQ ID NO. 3)

ATGAGAGGATCGCATCACCATCACCATCACGGATCCATGGCTAGCGGTAGAGGCGGGCTGGGTGGCCAG
GGTGCAAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGC
CTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCC
GCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGT
AGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGC
CGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGG
TGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCT
GGGTTCTCAGGGGACTAGCGGTCCGGGCGGTTATGGTCCGGGTCAACAACTAGCGGTAGAGGCGGGCT
GGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTG
GCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGG
CTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGG
GACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCC
GCAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTG
GGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGG
CTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTCCGGGCGGTTATGGTCCGGGTCAACAACTAGCGG
TAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTG
CCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGG
GTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCC
TGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCG
CGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTA
GAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCC
GGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTCCGGGCGGTTATGGTCCGGGTCAA
CAACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGC
CGCAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCT
GGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTG
GCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGG
CTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGG
GACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCC
GCAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTCCGGGCGGTTAT
GGTCCGGGTCAACAACTAGTGGGATCCGTGACCTGCAGCCAAGCTTAATTAG

Figure 4: pQE [(SP1)₄/(SP2)₁]₄Amino Acid Sequence (designated SEQ ID NO. 4)

MRGSHHHHHGSMASGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAA
AAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRG
GLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGPGGYGPGQQTSGRGGLGGQGAGAAAAAAAAA
AGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAG
AAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGP
GGYGPGQQTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAA
AAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQG
AGAAAAAAAAAAGGAGQGGYGGLGSQGTSGPGGYGPGQQTSGRGGLGGQGAGAAAAAAAAAAGGAG
QGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAA
AAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGPGGYGP
CQQTSGIRPAAKLN.

MRGSHHHHHGSMASGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAA
AAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRG
GLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGPGGYGPGQQTSGRGGLGGQGAGAAAAAAAAA
AGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAG
AAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGP
GGYGPGQQTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAA
AAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQG
AGAAAAAAAAAAGGAGQGGYGGLGSQGTSGPGGYGPGQQTSGRGGLGGQGAGAAAAAAAAAAGGAG
QGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAA
AAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGPGGYGP
CQQTSGIRPAAKLN.

Figure 5: *pET [(SP1)/(SP2)]*, Nucleic Acid Sequence (designated SEQ ID NO. 5)

ATGGCTAGCATGACTGGTGGACAGCAAATGGGTCGCGGATCCATGGCTAGCGGTAGAGGCGGGCTGGGT
GGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTAT
GGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCC
GCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACT
AGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGG
CGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGG
CCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGG
CGGCCTGGGTTCTCAGGGGACTAGCGGTCCGGGCGGTTATGGTCCGGGTCAACAACTAGCGGTAGAGG
CGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCA
AGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGG
TGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCT
TCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAG
CGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCG
GGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCA
GGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTCCGGGCGGTTATGGTCCGGGTCAACAACT
AGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGG
CGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGG
CCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGG
CGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGG
TGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAG
CGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCG
GTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTCCGGGCGGTTATGGTCCGG
GTCAACAACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAG
GCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGC
GGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCA
AGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGG
TGCGGCTGCGGCTGCCGCGGCAGCGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCT
TCAGGGGACTAGCGGTAGAGGCGGGCTGGGTGGCCAGGGTGCAGGTGCGGCTGCGGCTGCCGCGGCAG
CGGCCGAGGCGGTGCCGGCCAAGGTGGCTATGGCGGCCTGGGTTCTCAGGGGACTAGCGGTCCGGGCG
GTTATGGTCCGGGTCAACAACTAGTGGGATCCGAATTCGAGCTCCGTCGACAAGCTTCGAGCACCACC
ACCACCACCACTGA

Figure 6: pET [(SP1)₄/(SP2)₁₁]₄Amino Acid Sequence (designated SEQ ID NO. 6)

MASMTGGQQMGRGSMASGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGA
AAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRG
GLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGPGGYGPGQQTSGRGGLGGQGAGAAAAAAAAA
GGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAA
AAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGPGGY
GPGQQTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAG
GAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAA
AAAAAAGGAGQGGYGGLGSQGTSGPGGYGPGQQTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGL
GSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGG
AGQGGYGGLGSQGTSGRGGLGGQGAGAAAAAAAAAAGGAGQGGYGGLGSQGTSGPGGYGPGQQTSGIRIR
APSTSFEHHHHHH

Sequence 1

Figure 7: *pETNcDS* Nucleic Acid Sequence (designated SEQ ID NO. 7)

ATGGCTAGCATGACTGGTGGACAGCAAATGGGTCGGATCCGAATTCGTGGATATGGAGGTCTTGGTGGA
CAAGGTGCCGGACAAGGAGCTGGTGCAGCCGCCGACGACGAGCTGGTGGTGCCGGACAAGGAGGATA
TGGAGGTCTTGGAAGCCAAGGTGCTGGACGAGGTGGACAAGGTGCAGGCGCAGCCGACGCCGACGCTG
GAGGTGCTGGTCAAGGAGGATACGGAGGTCTTGGAAGCCAAGGTGCTGGACGAGGAGGATTAGGTGGA
CAAGGTGCAGGTGCAGCAGCAGCAGCTGGAGGTGTCGGACAAGGAGGACTAGGTGGACAAGGTGCTGG
ACAAGGAGCTGGAGCAGCTGCTGCAGCAGCTGGTGGTGCCGGACAAGGAGGATATGGAGGTCTCGGAA
GCCAAGGTGCAGGACGAGGTGGATCAGGTGGACAAGGGGCAGGTGCAGCAGCAGCAGCAGCTGGAGGT
GCCGGACAAGGAGGATATGGAGGTCTTGGAAGCCAAGGTGCAGGACGAGGTGGATTAGGTGGACAGGG
TGCAGGTGCAGCAGCAGCAGCAGCAGCCGGAGGTGCTGGACAAGGAGGATACGGTGGTCTTGGTGGAC
AAGGTGCCGGACAAGGTGGCTATGGAGGACTTGGAAGCCAAGGTGCTGGACGAGGAGGATTAGGTGGA
CAAGGTGCAGGTGCAGCAGCAGCAGCTGGAGGTGCCGGACAAGGAGGACTAGGTGGACAAGGAGCTGG
AGCAGCCGCTGCAGCAGCTGGTGGTGCCGGACAAGGAGGATATGGAGGTCTTGGAAGCCAAGGTGCTG
GACGAGGTGGACAAGGTGCAGGCGCAGCCGACGACGAGCCGGAGGTGCTGGACAAGGAGGATACGGT
GGACAAGGTGCCGGACAAGGAGGCTATGGAGGACTTGGAAGCCAAGGTGCTGGACGAGGAGGATTAGG
TGGACAAGGTGCAGGTGCAGCAGCAGCAGCAGCAGCTGGAGGTGCCGGACAAGGAGGATTAGGTG
GACAAGGTGCAGGTGCAGCAGCAGCAGCAGCTGGAGGTGCTGGACAAGGAGGATTAGGTGGACAAGGT
GCTGGACAAGGAGCTGGAGCAGCCGCTGCAGCAGCCGCTGCAGCAGCTGGTGGTGTAGACAAGGAGG
ATATGGAGGTCTTGGAAGCCAAGGTGCTGGACGAGGTGGACAAGGTGCAGGCGCAGCCGACGACGAG
CCGGAGGTGCTGGACAAGGAGGATATGGTGGTCTTGGTGGACAAGGTGTTGGACGAGGTGGATTAGGTG
GACAAGGTGCAGGCGCAGCGGCAGCTGTTGGTGGTGGACAAGGAGGATATGGTGGTGTGGTTCTGGGG
CGTCTGCTGCCTCTGCAGCTGCATCCCGTTTGTCTTCTCCTCAAGCTAGTTCAAGAGTTTCATCAGCTGTT
TCCAACCTTGGTTGCAAGTGGTCTACTAATTCTGCGGCCTTGTCAAGTACAATCAGTAATGTGGTTTCAC
AAATAGGCGCCAGCAATCCTGGTCTTTCTGGATGTGATGTCCTCATTCAAGCTCTTCTCGAGCACCACCA
CCACCACCACTGAA

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[illegible]

MASMTGGGQMGRIIRIRGYGGLGGQGAGQGAGAAAAAAGGAGQGGYGGLGSQGAGRGGQGAGAAAAA
AGGAGQGGYGGLGSQGAGRGGGLGGQGAGAAAAAGVGQGLGGQGAGQGAGAAAAAAGGAGQGGYG
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GLGGQGAGQGGYGGLGSQGAGRGGGLGGQGAGAAAAAGGAGQGGGLGGQGAGAAAAAAGGAGQGGYGGL
GSQGAGRGGQGAGAAAAAGGAGQGGYGQGAGQGGYGGLGSQGAGRGGGLGGQGAGAAAAAAGGA
QGGLGGQGAGAAAAAGGAGQGGGLGGQGAGQGAGAAAAAAGGVRQGGYGGLGSQGAGRGGQ
GAGAAAAAGGAGQGGYGGLGGQGVGAGGLGGQGAGAAAVGAGQGGYGGVGSGASAAASAAASRLSS
PQASSRVSSAVSNLVSAPTNSAALSSTISNVVSQIGASNPGLSGCDVLIQALLGHHHHHH.

Figure 9: OmpF Amino Acid Sequence, designated SEQ ID NO. 9, without the Signal Sequence (as recovered from *E. coli* by Valeric Acid)

AEIYNKDGKVDLYGKAVGLHYFSKNGENSYGGNGDMTYARLGFKGETQINSDLTGYGQWEY
NFQGNNSEGADAQTGNKTRLAFAGLKYADVGSFDYGRNYGVVYDALGYTDMLEFGGDTAYSD
DFFVGRVGGVATYRNSNFFGLVDGLNFVQYLGKNERDTARRSNGDGVGGSSISYEYEGFGIVGAY
GAADRTNLQEAQPLGNGKKAQWATGLKYDANNIYLAANYGETRNATPITNKFTNTSGFANKTQ
DVLLVAQYQFDFGLRPSIAYTKSKAKDVEGIGDVDLVNIFEVGATYYFNKNMSTYVDYIINQIDS
DNKLGVGSDDTVAVGIVYQFA

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

ATGAGAGGATCGCATCACCATCACCATCACGGATCCATGGCTAGCGGTGACCTGAAAAACAA
AGTGGCCCAGCTGAAAAGGAAAGTTAGATCTCTGAAAGATAAAGCGGCTGAACTGAAACAAG
AAGTCTCGAGACTGGAAAATGAAATCGAAGACCTGAAAGCCAAAATTGGTGACCTGAATAAC
ACTAGTGGGATCCGTCGACCTGCAGCCAAGCTTAATTAG

Figure 11: Recognin B1 Amino Acid Sequence (designated SEQ ID NO. 11)

MRGSHHHHHHGSMASGDLKNKVAQLKRKVRSLKDKAAELKQEVSRLENEIEDLKAKIGDLNNTSGIRRPAA
KLN

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Figure 12

Comparative Gel of Acid Lysis vs. Traditional Denaturing Conditions

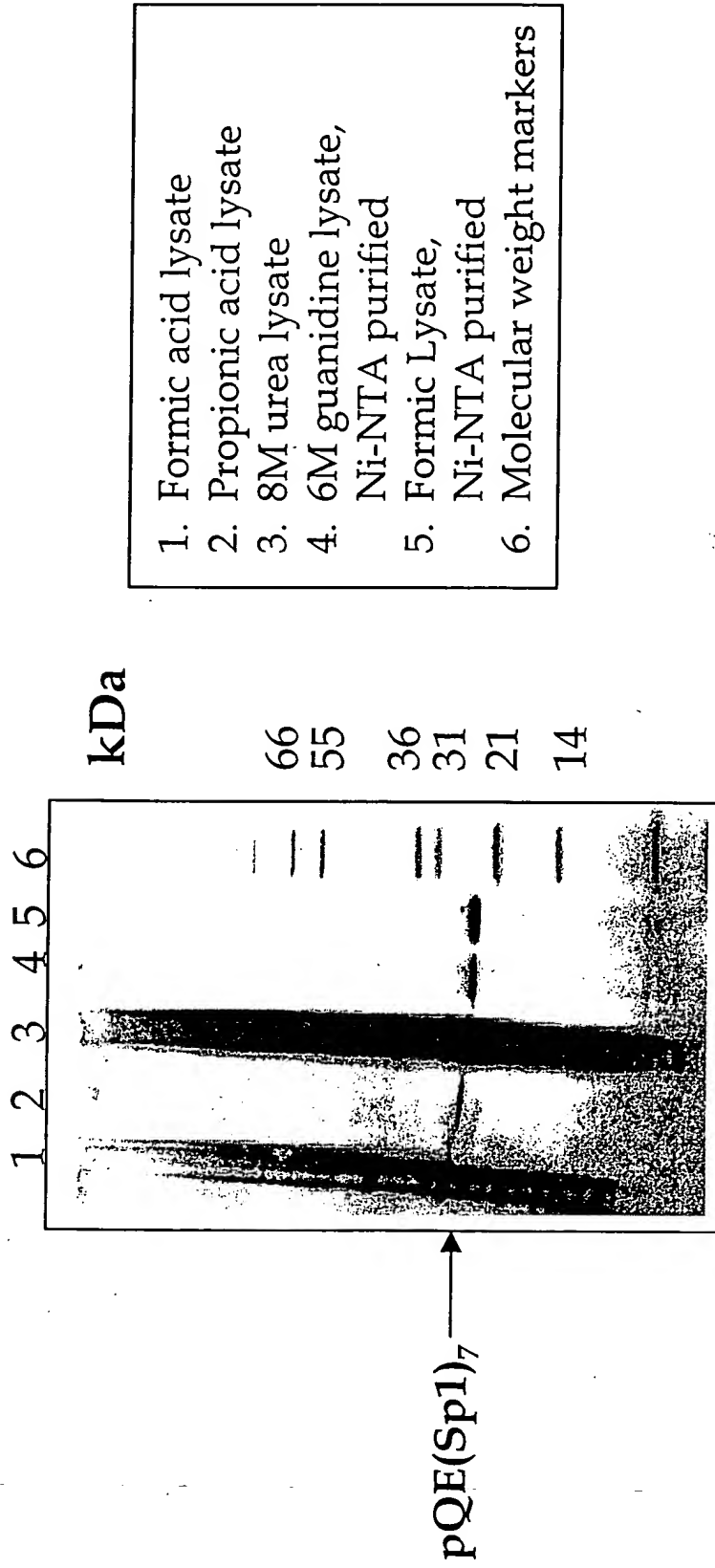


Figure 13

Gel of QAE-Sephadex Purification
of Propionic Acid (PA) Extracted pET[(Sp1)₄/(Sp2)₁]₄Protein

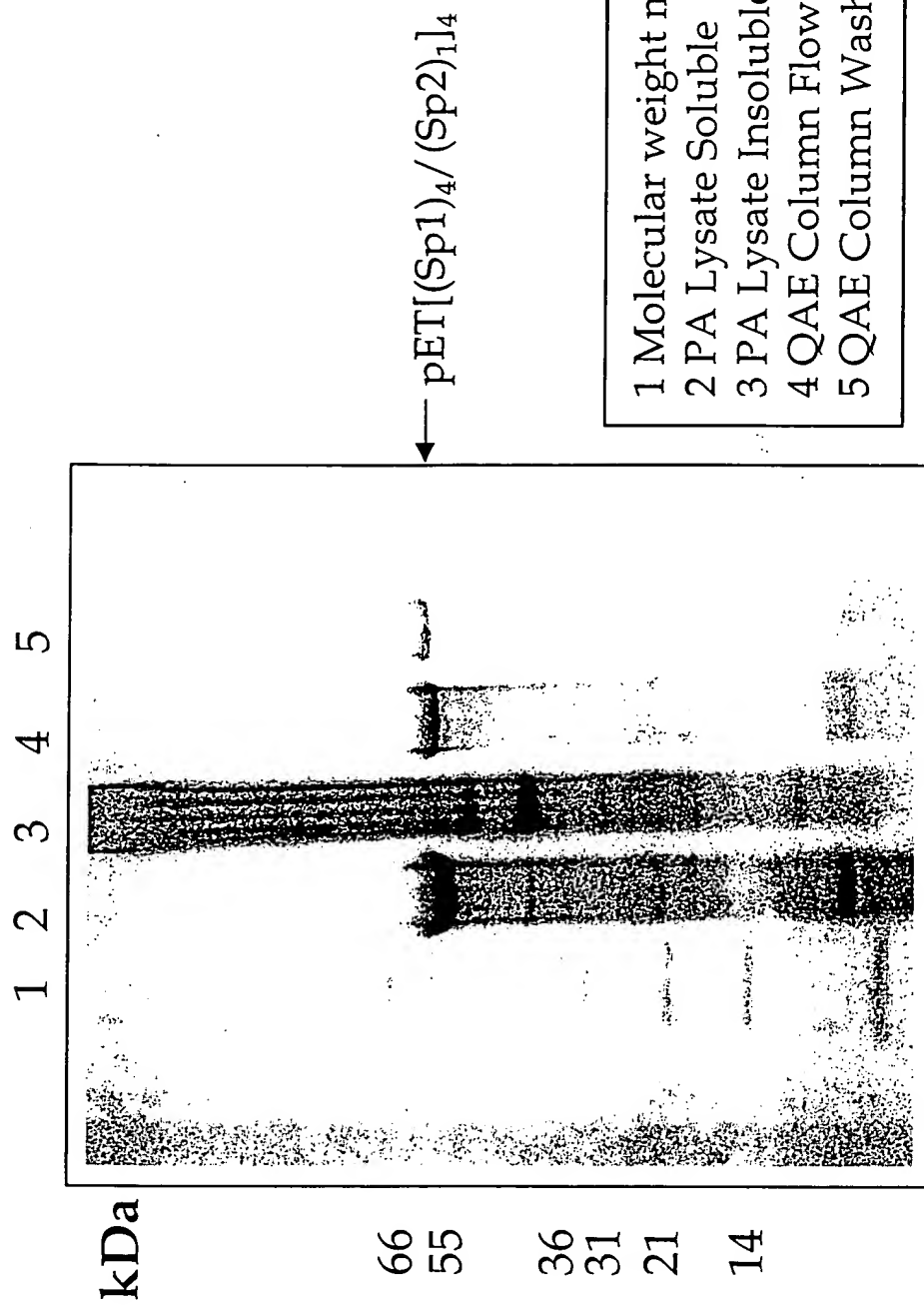


Figure 14
 QAE-Sephadex Purification of Propionic Acid
 and Guanidine-HCl Extracted pET[(SP1)₄/(SP2)₁₄] Protein

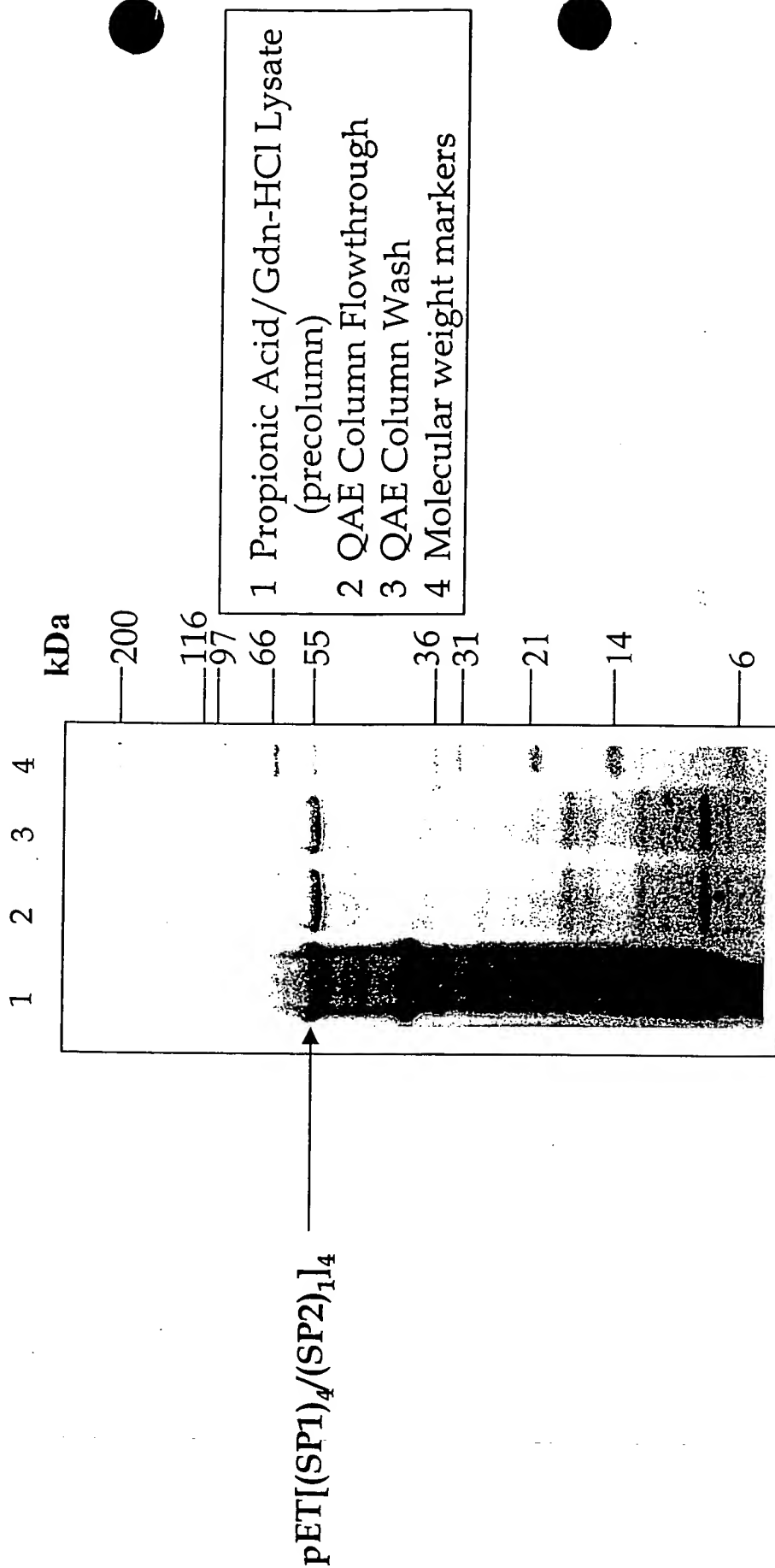
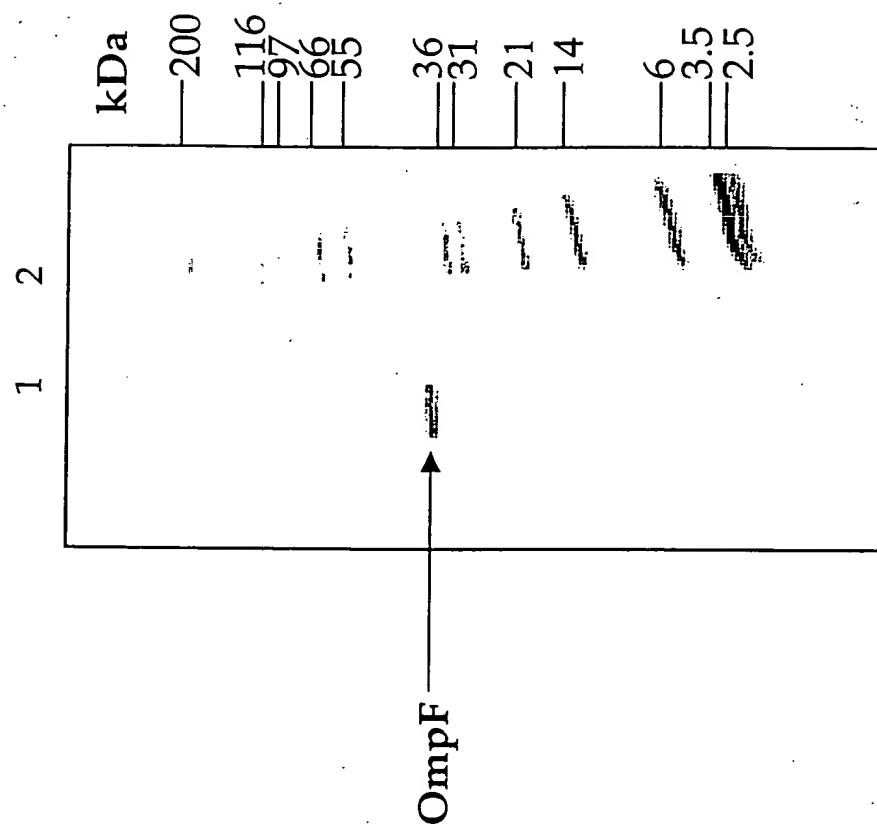


Figure 15
OmpF -Valeric Acid Lysis



1. OmpF pellet lysed in valeric acid
2. Molecular weight markers

Figure 16

Comparative Gel of Recognin B1 Acid Lysis

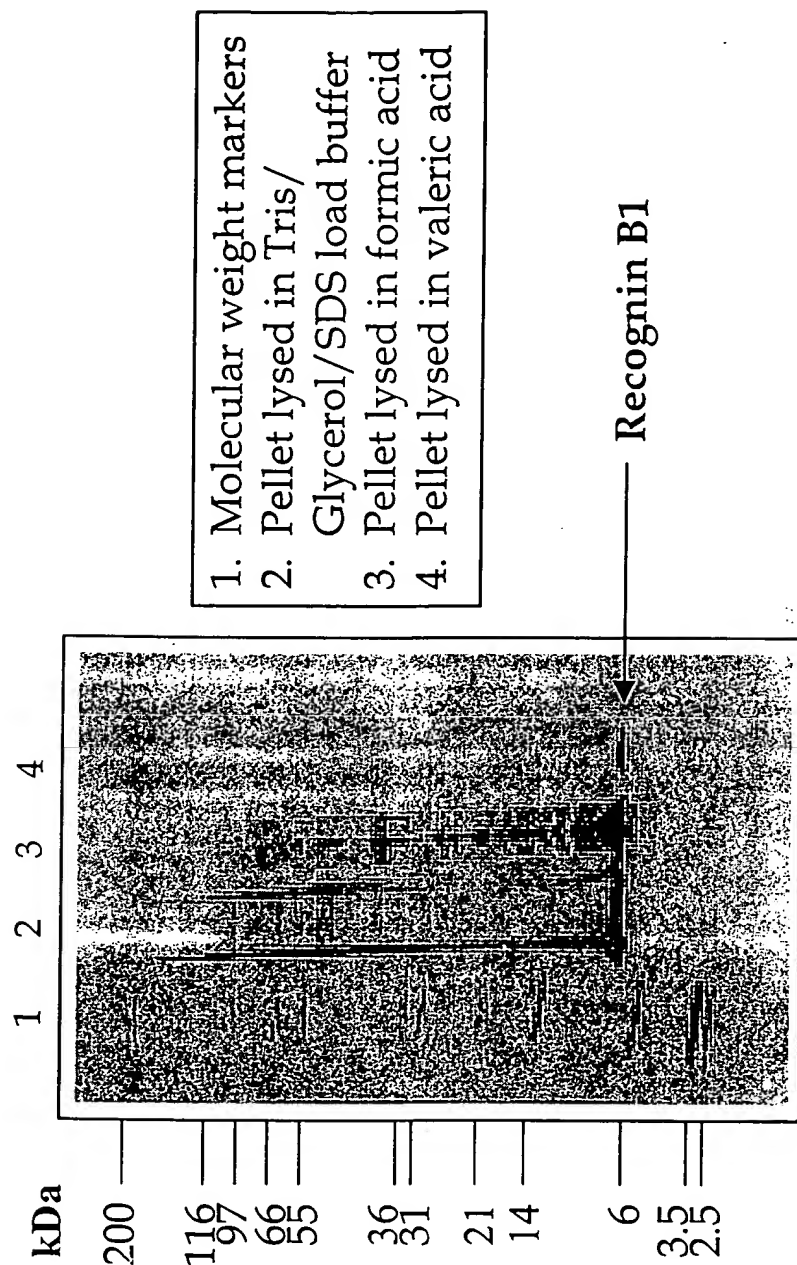
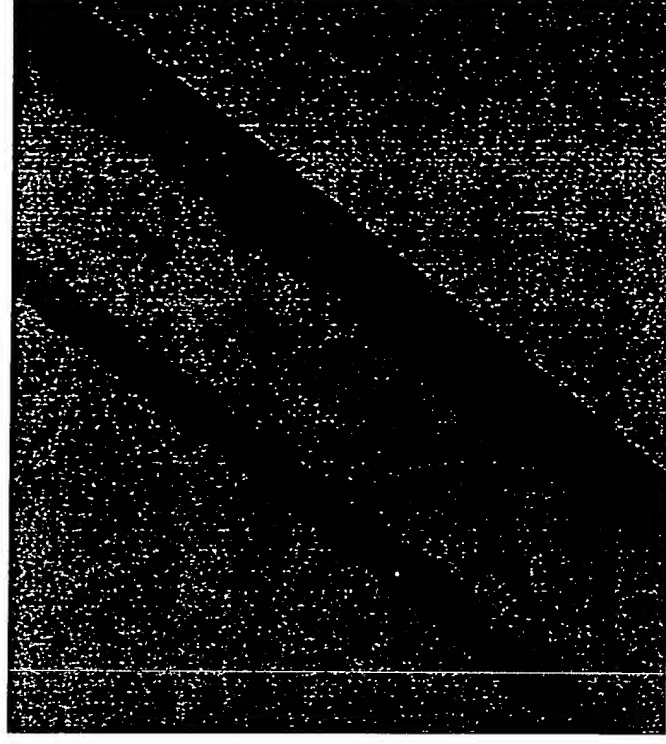
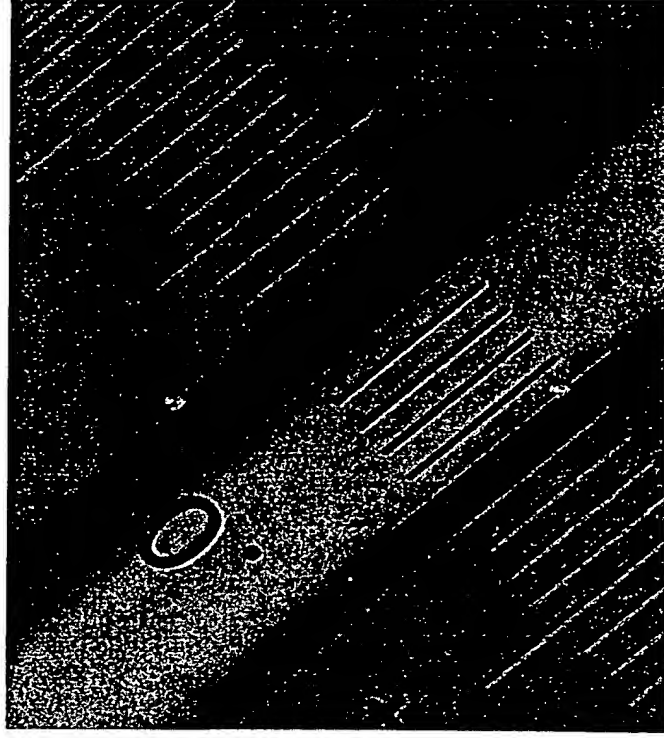


Figure 17

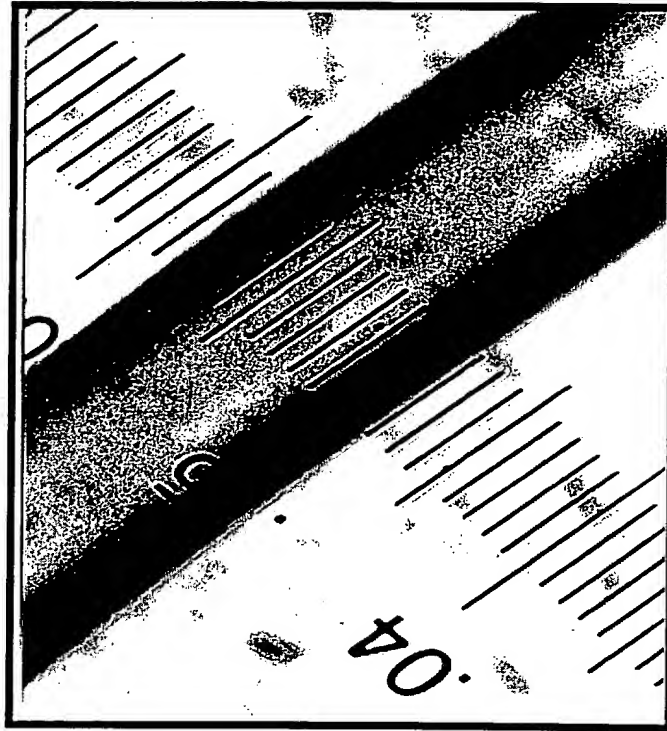
pETNcDS fiber under light microscopy. Spun from 25% protein solution into 90% methanol coagulation bath.



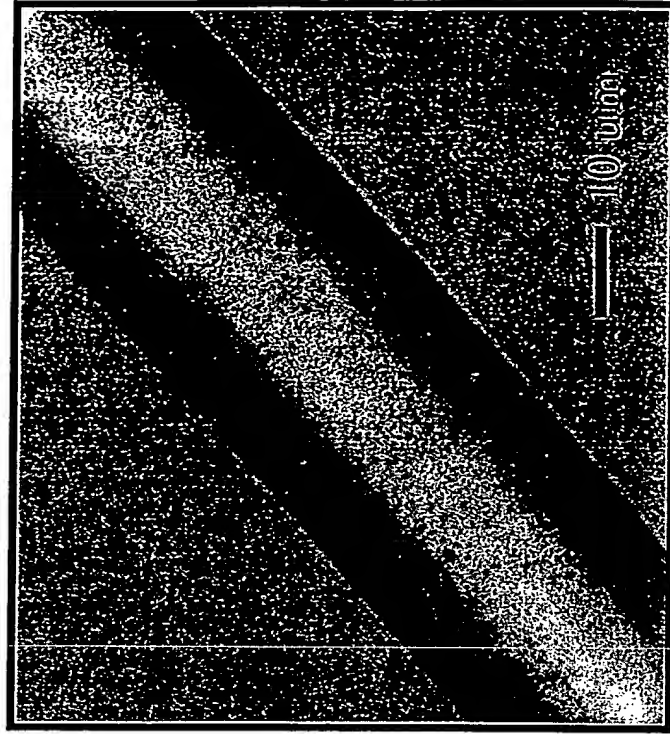
Polarized light w/tint plate

Figure 18

pQE[(SP1)₄/(SP2)₁]₄ fiber under light microscopy. Spun from a 12.5% protein solution into 90% methanol coagulation bath.



White light



Polarized light
w/ tint plate